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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/072,873	02/12/2002	Paolo Cuzzato	108910-00052	2426

7590

08/13/2003

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EXAMINER
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VOLLANO, JEAN F

ART UNIT	PAPER NUMBER
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1621

DATE MAILED: 08/13/2003

15

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Applicati n No.

10/072,873

Applicant(s)

CUZZATO ET AL

Examiner

Jean F. Vollano

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondenc address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 4-6, 11-13 and 19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 7-10 and 14-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

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### **DETAILED ACTION**

1. The amendment filed 7/28/2003 has been entered. Claims 1-6 and newly added claims 7-19 are pending.
2. Newly submitted claim 4- 6, 11-13 and 19 ( in full) and claims 1, 8 and 16( in part) directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: Even though it is not written in the correct step manner, Claims 4, 11 and 19 are adding a preparation of the catalyst which was not part of the claims as originally filed. These claims should be written in an active verb to include them in the process, and it is assumed that this is what is intended by the addition of this limitation. However the preparation of the catalyst before being used in the process was not part of the original claims and therefore claims 4-6, 11-13, and 19 and claims 1, 8, and 16( in part) to the extent that are part of claims 4-6, 11-13 and 19 are considered a patentably distinct invention and different from the original presentation. The process of first making the catalyst and then continuing with the process is a different process from starting with a catalyst of any origin and proceeding with the reaction. The catalyst process could be novel making the whole claim novel even if the steps of making CFC 113a after the catalyst preparation are known. This would also entail a search of catalyst preparation as found in class 502 which was not searched during the original prosecution.

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Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution the merits. Accordingly, claims 4-6, 11-13 and 19 ( in full) and claims 1, 8 and 11( in part to the extent they include claims 4-6,11-13 and 19) are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03. Thus claims 1-3, 7-10 and 14-18 will be examined to the extent that they read on the elected invention. Claims 4-6, 11-13 and 19 are completely withdrawn as being drawn to non elected subject matter. Claims 1-3, 7-10 and 14-18 will be examined to the extent that they read on the previous invention that does not contain a step for the preparation of the catalyst.

3. The addition of a temperature range to claim 1 of "less than 200°C" reads on "about 200°C" in column 3 of Manzer and the 35 U.S.C. 102(b) rejection of claim 1 is maintained. Applicant argues that "less than 200°C" is not found in Manzer. Manzer teaches "about 200°C" which gives a + and - value to the temperature limitation. About 200 reads on 199 and 201 and therefore meets the limitation of less than 200.

4. Since the claims have been changed the examiner will withdraw the 103(a) rejections and rewrite the 103(a) to include the changes in the claim language and the newly added claims.

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***Claim Rejections - 35 U.S.C. § 112***

5. Claims 1-3, 7-10, 14-18 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 1 recites the limitation of from “50 to less than 200<sup>0</sup>C.” The examiner cannot find any reference in the specification to “less than” 200<sup>0</sup>C. The examiner can find 100-200<sup>0</sup>C but no mention of “less than”. There is only one mention of the term less than in the whole specification and it refers to a % weight not temperature. Applicant must be in possession of the invention at the time of filing and if the point of “less than 200<sup>0</sup>C” is a critical limitation of the invention then that endpoint of less than should be found somewhere in the specification. The prior art teaches “ from about 200<sup>0</sup>C” and it is unclear if that is why the limitation has been added or if applicant has support of “less than” 200<sup>0</sup>C being a critical point.

Applicant should either withdraw the new limitation or show definite support in the specification for the limitation of “less than”.

Claim 8 recites the limitation of from “ 50<sup>0</sup> C to about 183<sup>0</sup>C”. Example 5 has a temperature limitation of 183<sup>0</sup>C, as does table 1, and so that point has support in the specification. However there is nothing in the specification that states “about” 183<sup>0</sup>C and therefore that limitation is considered new matter.

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Applicant should remove the new matter or show support for the limitation in the specification. Claim 8 recites the limitation of “ at least 77.73% by weight”. There is support in table one for 77.73% by weight being a low point. However the wording reads on any upper limit including 100%. The table has a maximum of 84.67% by weight. Therefore any thing above that limitation is considered new matter. There is no showing that the mixture can be any % weight above 77.73%. This type of problem also occurs for the limitation in claim 16 of “less than or equal to 0.9%” . There is a minimum in the numbers given in the table. Also it is confusing that 77.73% has 1.2% of CFC113. However since this is an independent claim the 0.9 % itself is okay. Claim 15 recites “at most 0.97%” which again gives no bottom limit and it was taken from table 1. There is no recitation in the specification of “at most 0.97%” without a lower limit. Also the examiner cannot find the wording “at most” anywhere in the specification or claims as originally filed. Claim 7 has a similar problem with “ lower than 1% by weight “. The same applies to claim 14. All the limitations of % weight have this problem in all the claims they appear.

A point in the specification examples cannot be taken out from context and used as a complete lower or upper limit disregarding the context of the rest of the specification.

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6. Claims 7, 8-10, 14-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 recites the limitation of "residual CFC-113 in the reaction mixture is lower than 1% by weight based on the CFC-113a and CFC-113 present". It does not say at what time this is being made a limit. Is it at the end of the reaction? Is it in the middle of the reaction? The claim is confusing as to the metes and bounds that are being claimed. The same type of problem occurs in claim 8 with the limitation of "at least 77.73% by weight". Is this the final product amount? This applies claims 14, 15, and 16. Is it the reaction mixture at the end of the reaction which contains real a product mixture or is it the reaction mixture at the middle of the reaction etc. The claims are confusing as to the metes and bounds that are being claimed as part of the instant invention.

***Claim Rejections - 35 U.S.C. § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Manzer et al US 5,243,106.

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Manzer et al teaches a process for the preparation of CFC113a as well as other products from the reaction of CFC113 on a catalyst consisting of aluminum fluoride (see abstract and examples).

Manzer et al teaches that the process of isomerizing the saturated C2 fluorohydrocarbons including CFC113 is preformed by contacting in the gaseous phase at a temperature of from about 200°C (see column 2, lines 60-65 and examples). It is noted that about 200°C reads on less than 200°C .

Manzer et al teaches that after a time there is a mixture of CFC113a and CFC113 in the reaction see examples ( there is no limitation that the mixture be an initial mixture before the reaction begins to occur).

Manzer et al teaches that the catalyst is in a fixed or fluidized bed (see the examples)

Manzer et al does not specifically teach various lower temperatures.

However it would have been obvious to one of ordinary skill in the art to have used the process of Manzer et al and to have optimized the reaction conditions (e.g. temperature and flow rate) to have optimized the yield. ( A change in temperature, concentration or both is normally an unpatentable modification unless the ranges claimed produce a new and unexpected result which is different in kind and not merely different in degree from the prior art. *In re Aller* , 220 F.2d 454, 105 USPQ 233, 235 (CCPA 1955).(Claimed process which was performed at a temperature between 40 degrees C and 80 degrees C and an acid concentration between 25 and 70% was held to be prima facie obvious over a reference process which differed from the claims only in that



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the reference process was performed at a temperature of 100 degrees C and an acid concentration of 10%).

The process is the same the only difference is the temperature and there are has been no showing of unexpected results.

8. Claims 1-3, 7-10 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blanchard et al (Applied Catalysis which is the text of Chem abs 673 cited in the last office action).

Blanchard teaches the process for preparing CFC113a starting from CFC113 in the presence of a catalyst consisting of aluminum fluoride ( See table 2).

Blanchard teaches that after the initial reaction there is both CFC113 and CFC113a as a mixture in the reaction.

Blanchard teaches that the  $\text{AlF}_3$  is a fixed bed (see apparatus batch reaction).

Blanchard teaches uses  $400^\circ\text{C}$  but does not preclude other temperatures( See tables and figure ( there is a misprint on figure 1 the  $4000^\circ\text{C}$  should be  $400^\circ\text{C}$ -see invention.

Blanchard teaches that the best catalyst for the production of CF113a is aluminum fluoride without hydrogen fluoride present( see table 2).

Blanchard does not specifically teach lower temperature but does not preclude the temperature being lowered. The study is a comparison of catalysts at a given temperature and the range of products.

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It would have been obvious to one of ordinary skill in the art to use the process of Blanchard and to optimize the temperature to optimize the yield/purity of the desired product since Blanchard teaches that the  $AlF_3$  is the better catalyst for forming CFC113a (see page 126). Blanchard also teaches that the isomerization of CFC 113 to form the CFC113a is fast and then the CFC113a disproportionates to form the by product (CFC114) see page 123. The isomerization reaction as well as all the reaction requires heat and it is well known to one of ordinary skill in the art that heat drives all the reactions including the disproportionation reaction. It would have been obvious to one of ordinary skill in the art to have lowered the temperature to avoid the byproduct reaction and give a larger yield of CFC 113a. It is not unobvious to modify a known reaction temperature barring unexpected results from that change. It is also well within the purview of one of ordinary skill in the art to have used the two main alternative bed types (fixed or fluidized) for the instant process.

( A change in temperature, concentration or both is normally an unpatentable modification unless the ranges claimed produce a new and unexpected result which is different in kind and not merely different in degree from the prior art. *In re Aller* , 220 F.2d 454, 105 USPQ 233, 235 (CCPA 1955)(Claimed process which was performed at a temperature between 40 degrees C and 80 degrees C and an acid concentration between 25 and 70% was held to be prima facie obvious over a reference process which differed from the claims only in that the reference process was performed at a temperature of 100 degrees C and an acid concentration of 10%).

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The instant process seems to only call for a reaction of the catalyst without other components which is given by Blanchard. The difference is only in the temperature that is being claimed. A change in temperature in a known reaction to optimize the product is not an unobvious modification.

9. In reference to the 103(a) over Manzer, Applicant argues that the temperatures of 375 and 400 show that the process decreases the conversion. However the examples are only two and they are at the high end of the temperature range. Manzer teaches about 200 °C which is also applicant's temperature. One cannot just use the examples present if the art teaches a temperature of about 200°C which meets the limitation of some of the claims. The art also teaches the use of aluminum fluoride and having C113 converted to C113a. This appears to be the same as applicant's claimed material. Is the starting material pure C113 in the instant invention? The reactions are the essentially the same.

In reference to the rejection of Blanchard which is the full text of Chem abs 673, applicant argues that the temperature is 400°C. Blanchard does teach that the AlF<sub>3</sub> without any HF present gives the best yield of the CFC113a from CFC113 and that the next step that occurs is that the CFC 113a undergoes disproportionation once it is formed. This would lead one of ordinary skill in the art to lower the temperature since the first step is fast according to Blanchard which is the production of CFC113a which would deter side reactions after the initial process.

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Blanchard was a study to compare catalysts and Blanchard's main teaching is that if one wants CFC113a to be the main product one should use the  $\text{AlF}_3$  catalyst without hydrogen fluoride. The temperature is only one point and with this information it would have been obvious to one of ordinary skill in the art to modify the temperature to optimize the CFC113a using the preferred catalyst of  $\text{AlF}_3$  for the process. There is no teaching away from since there is no teaching that only one temperature will be effective. One of ordinary skill in the art has a basic understanding of chemistry and when the art teaches a favored catalyst and the reagents one of ordinary skill in the art would optimize the known reaction by modification of common parameters (e.g. temperature, concentration, pressure).

There is a case for prima facie obviousness in the 103(a) rejections and they are maintained.

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).
11. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

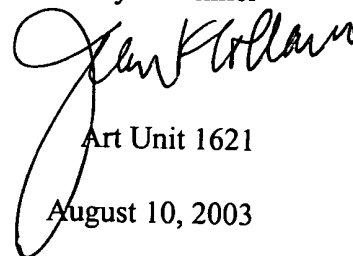
12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr J F Vollano whose telephone number is (703) 305-4483. The examiner can normally be reached on Monday to Thursday from 6:30 to 5:00 .

13. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter , can be reached on (703)308-4532 . The official fax phone number for the organization where this application or proceeding is assigned is (703)308-4556. It should be noted that the examiner cannot immediately work on a fax sent to this number.

14. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-1235.

Jean F. Vollano

Primary Examiner

A handwritten signature in black ink, appearing to read "Jean F. Vollano", is written over the printed name and title.

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August 10, 2003

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